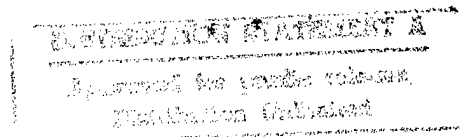


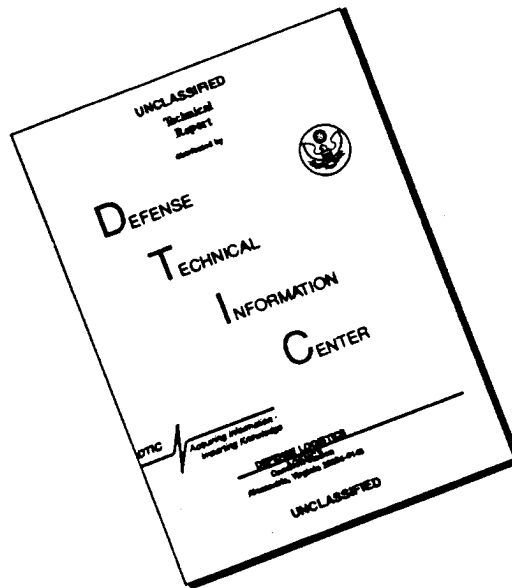
"A Phase I Archaeological Survey of the  
Proposed Timber Harvest Area in Hunting Area  
54 on the Fort Knox Military Reservation,  
Hardin County, Kentucky" by Pamela A. Schenian,  
Fort Knox. July 1995.

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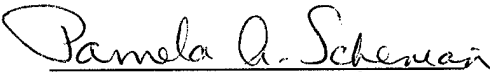
A Phase I Archaeological Survey  
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on the Fort Knox Military Reservation,  
Hardin County, Kentucky

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DPW Forestry Section Project FY 95-2

July 1995

  
Pamela A. Schenian  
Project Principal Investigator

## ABSTRACT

In July 1995, the Fort Knox Contract Staff Archeologist conducted a Phase I archaeological survey of a proposed timber harvest area in Hunting Area 54 on the Fort Knox Military Reservation, Hardin County, Kentucky. The timber harvest area encompasses approximately 48 acres (19 ha) in an irregularly shaped area on the ridge tops and slopes adjoining Easy Gap Road. Only selected trees, which were marked by Forestry Section personnel prior to the archaeological survey, will be harvested for marketing, but fallen and damaged trees also will be removed. The survey resulted in the discovery of no archaeological sites. A cemetery (Cemetery #109 or the Stone/Hern Cemetery) is located in the project area and has considerable tree damage near it. It is recommended that the timber harvest be conducted as proposed, but that the contract staff archaeologist be on-site when the timbering is performed in the vicinity of the cemetery to assist with the protection and clean-up of the cemetery. If feasible, the cemetery should be fenced after the logging operations are completed to facilitate its future location, protection, and management.

## MANAGEMENT SUMMARY

In accordance with Executive Order 11593 and other applicable federal laws and regulations, a Phase I archaeological study was conducted of a proposed timber harvest area in Hunting Area 54 on the Fort Knox Military Reservation, Hardin County, Kentucky. This timber harvest will combine the logging of marketable timber with the removal of standing hazard trees and trees blown over during a violent storm in May. No evidence was found of archaeological materials or of potential archaeological deposits. A cemetery is located in the project area, however, and has considerable storm damage around it. It is recommended that the timber harvest be conducted as proposed, but that the Fort Knox contract Staff Archaeologist be on-site when the logging is conducted in the cemetery vicinity to assist with its protection and clean-up.

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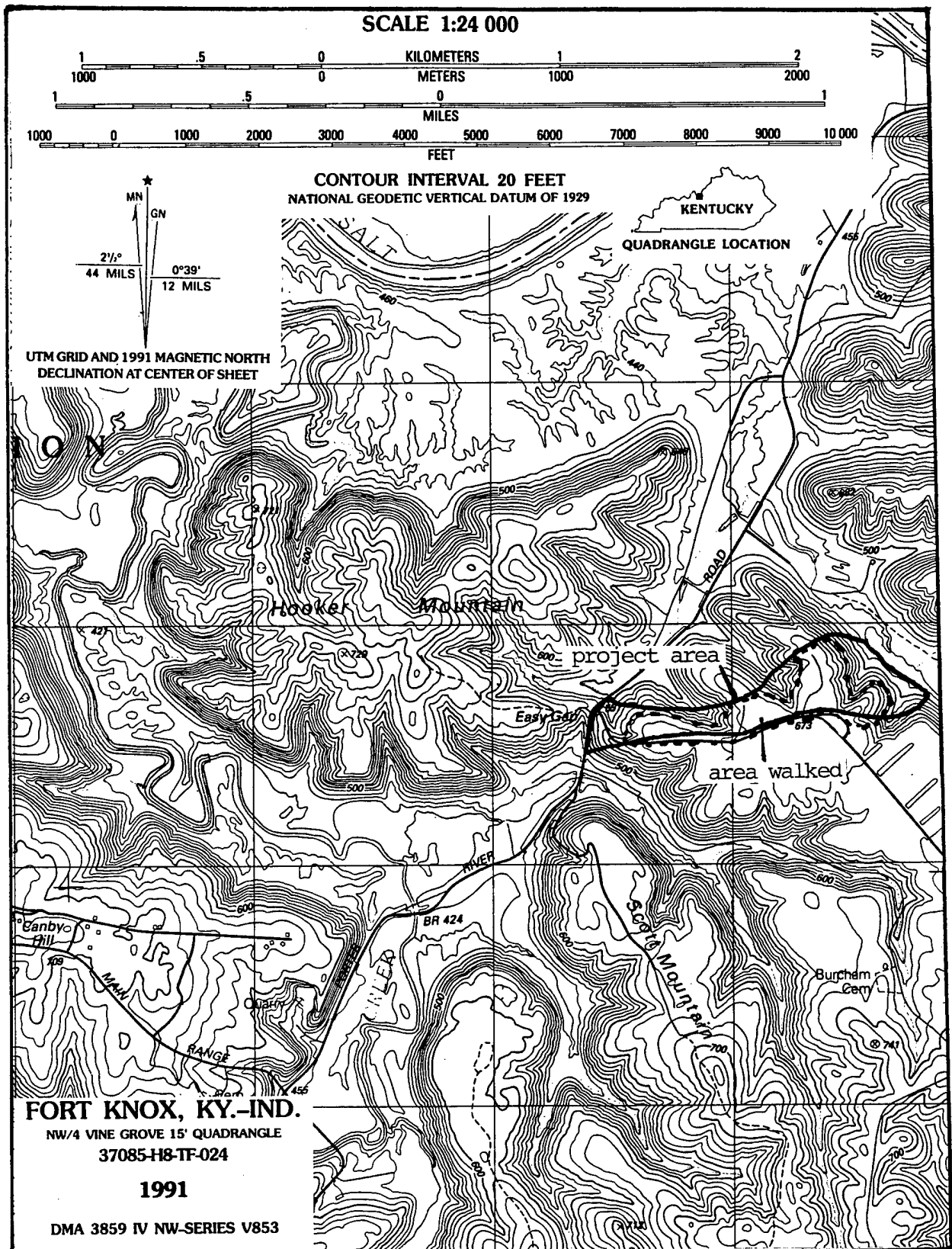
## INTRODUCTION

In July 1995, the Fort Knox Contract Staff Archaeologist, an employee of J.M. Waller Associates, Burke, Virginia, performed a Phase I archaeological survey of a proposed timber harvest tract in Hunting Area 54 of the Fort Knox military reservation, Hardin County, Kentucky (Figure 1). The proposed timber harvest area encompasses approximately 48 acres (19 ha) on the ridge top and slopes. All of the project area lies on the north side of Easy Gap Road except for a steep slope immediately adjacent to Porter River Road. This ridge was the site of straight line wind damage during a severe storm on May 16, 1995. Approximately 34 acres (13.7 ha) sustained heavy damage, with almost every tree blown down or otherwise affected, and approximately 14 acres (5.6 ha) sustained minor damage (Figure 2). Only some of the trees are marketable timber. The trees selected for marketing had been marked with blue paint by the Fort Knox Forestry Section personnel prior to the archaeological survey, and were used to determine the northern extent of the project area. All accessible portions of the project area were inspected, however, since this project will combine timber harvesting for marketing with storm damage cleanup.

In 1993, the Fort Knox Contract Staff Archaeologist obtained all the documents necessary to perform Phase I literature searches for the installation (e.g., site forms, reports of previous investigations, historic maps). These documents are on file at the Environmental Management Division of the Directorate of Public Works, Fort Knox, and are updated on a regular basis. No file check therefore was made with the Office of State Archaeology and the Kentucky Heritage Council specifically for this project.

A literature search revealed that the easternmost ridge had been previously surveyed (O'Malley et al. 1980), with negative results. The ridge crest had been the locus of a historic structure cluster, however, so it was rewalked during the current survey. It was rewalked because the width of a pencil line could make the difference between the historic building(s) being in or out of O'Malley's et al.'s survey area on a 1:24,000 scale map and because field conditions during the earlier survey may not have been optimal for site discovery. No other portions of the current project area had been surveyed previously and so all accessible portions of the project areas were inspected by walkover, supplemented by shovel probing. Only the ridge crests and upper slopes were inspected, because the lower slopes were made inaccessible by the numerous fallen trees.

The proposed timber harvest project area is located in the Plain section of the Pennyryle cultural landscape, on the hill and ridge crests and slopes of a dissected upland area. Elevations in the proposed timber harvest area range



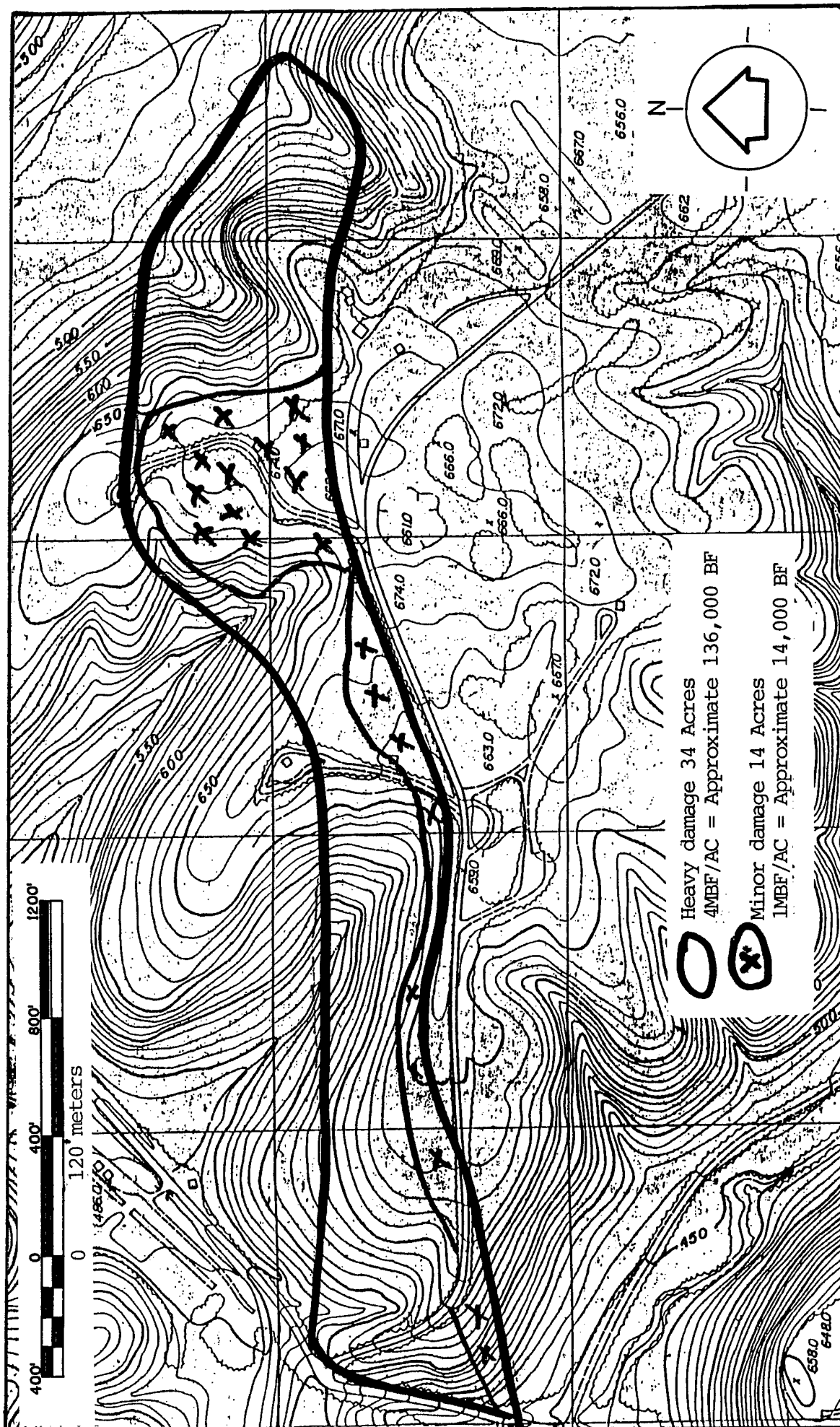


FIGURE 2. Storm Damage Assessment.

from 480 to 675 feet, although the area walked was limited to the 600 foot contour and above. Soils are classified as Crider-Vertrees soil association (U.S.D.A. 1975: General Soil Map). Drainage from the one slope south of Easy Gap Road is into a tributary of Mill Creek, a tributary of the Salt River, and drainage in the remainder of the project area is into the headwaters of an unnamed tributary of the Salt River. The archaeological survey was conducted in preparation for the cleanup of storm damage and the harvesting of selected trees within the project area. The archaeological survey and literature review were required to comply with the National Environmental Policy Act, or NEPA (Public Law 91-190), the Historic Preservation Act of 1966, as amended (Public Law 89-665), the Archaeological Resources Protection Act of 1979 (Public Law 96-95), Presidential Executive Order 11593, and Army Regulation 420-40. The project number is FY 95-2, an in-house number assigned by the Forestry Section of the Environmental Management Division of the Directorate of Public Works.

The project area was surveyed on July 10 and 19, 1995. A total of 4.0 person hours were spent in the survey of the project area. No artifacts were observed or collected in this survey. Documentation of this project will be curated at the University of Louisville Program of Archaeology, on a "permanent loan" basis, under contract number DABT 23-93-C-0093, for curatorial and technical support (copy of contract on file, DPW, Fort Knox, Kentucky). Duplicate copies of the documentation will be stored at the Directorate of Public Works (DPW), U.S. Army Armor Center and Fort Knox, Fort Knox, Kentucky.

#### PREVIOUS RESEARCH

Approximately 26,260 acres of the Fort Knox installation have been surveyed for archaeological sites at some level, primarily in cultural resource management (CRM) studies. Schenian and Mocas (1994) summarize the archaeological studies conducted on or near the installation through August 1994. This section will focus on the previous research conducted within a 2 km radius of the current project area.

O'Malley et al. (1980) surveyed approximately one-quarter of each of Hunting Areas (HA) 52, 54-56, 59, and 63 near the current project area. They recorded 15Hd173, 15Hd175, and 15Hd176 in HA 52; 15Hd183, 15Hd269, and 15Hd270 in HA 54; 15Hd276 in HA 55; 15Hd293 and 15Hd294 in HA 56; 15Hd169, 15Hd170, 15Hd172, 15Hd187, 15Hd262, and 15Hd264 in HA 59; and 15Hd194 and 15Hd195 in HA 63. The nearest sites to the current project are 15Hd176, 500 m north and on the opposite side of a major drainage and 15Hd183, 500 m south and outside the project area. The O'Malley et al. (1980) survey area in HA 54 included the easternmost ridge in the

current project. No sites were recorded on this ridge in the O'Malley survey.

Hemberger (1991) surveyed a proposed construction tract within HA 54, immediately south of Easy Gap Road across from the center of the current project area, encountering no sites. Bush et al. (1989) surveyed most of Hunting Area 52, recording 15Hd438-15Hd446. All of the Bush et al. sites are approximately 1 km or more from the current project area.

No archaeological sites listed on or eligible for listing on the National Register of Historic Places are located in or immediately adjacent to the current project area. No buildings listed on or known to be eligible for the National Register are located in or within the viewshed of the current project area. Four buildings exist within the project area. Three are latrines (one in each bivouac area) and the third is a frame building. The frame building has a sheet metal roof and siding and is in dilapidated condition.

One cemetery, Cemetery #109 or the Stone/Hern Cemetery, is located in the project area. This cemetery will be described in greater detail in a separate section.

#### SURVEY PREDICTIONS

Based on previous archaeological research in the area, the history of settlement, and the environmental setting of the project area, the following results were expected:

- 1) Portions of the proposed timber harvest area have been previously developed for use as bivouac or training areas. Some disturbance due to construction or use of these areas is expected.
- 2) The west half of the project area lies within the section of the installation acquired by 1919, and the east half was shown on the 1919 map, but not purchased until the 1940's. The 1919 Camp Knox land acquisition map depicts structure locations. The west half of the project area was purchased from the heirs of Mary Stone. Three clusters of buildings were located on the Stone property, but all are located on the west side of Porter River Road and outside the current project area. The east half of the project area was owned by M. Cooley in 1919, and purchased from William M. Brown in the 1940's. Two structure clusters were present on the Fort Knox quadrangle section of the Cooley property in 1919, but only one was located within the current project area. This structure cluster was located at the easternmost ridge crest in the project area. There is some

potential for structural ruins or archaeological deposits associated with the Cooley/Brown occupations, although military construction on this ridge reduces the potential for intact deposits. O'Malley et al. (1980) had surveyed the area in which the Cooley/Brown structures had been located, and had not recorded an archaeological site. This also suggests that there is a reduced potential for archaeological deposits relating to the historic occupation.

- 3) Ridge tops overlooking drainages are considered high probability areas for prehistoric habitation and processing sites.
- 4) Previous surveys in the project vicinity have yielded a moderate site density for this portion of the base.

#### SETTING AND FIELD METHODS

The proposed timber harvest project area is located in the Plain section of the Pennyryle cultural landscape, on the ridge crests and slopes of a dissected upland area. The project area encompasses portions of four adjoining ridge spurs of a ridge system (Figure 3). Elevations in the proposed timber harvest area range from 480 to 675 feet, although the area walked was limited to the 600 foot contour and above. Below the 600 foot contour interval, fallen trees obscured much of the ground surface as well as made walking hazardous through the combination of steep slopes, unsure footing, and hidden root holes.

Drainage from the one slope south of Easy Gap Road is into a tributary of Mill Creek, a tributary of the Salt River. Drainage in the remainder of the project area is into the headwaters of an unnamed tributary of the Salt River. Portions of the headwaters of Mill Creek and the unnamed tributary originate on opposite slopes of a narrow ridge which connects the ridge system on which the current project area is located from a nearly isolated upland mass, Hooker Mountain, which rises approximately 260 feet above the surrounding floodplain.

Soils in the project area are classified as Crider-Vertrees soil association (U.S.D.A. 1975: General Soil Map). Underlying the soils on the ridge above the 660 foot contour interval is the Mississippian age Salem Limestone formation. This overlies the Harrodsburg Limestone formation, which in turn overlies the Muldraugh and Nancy members of the Borden Formation (Kepferle and Sable 1977). These limestones formations or residuum from them outcrop in eroded or deflated areas of the project area. The floodplain of Salt River and

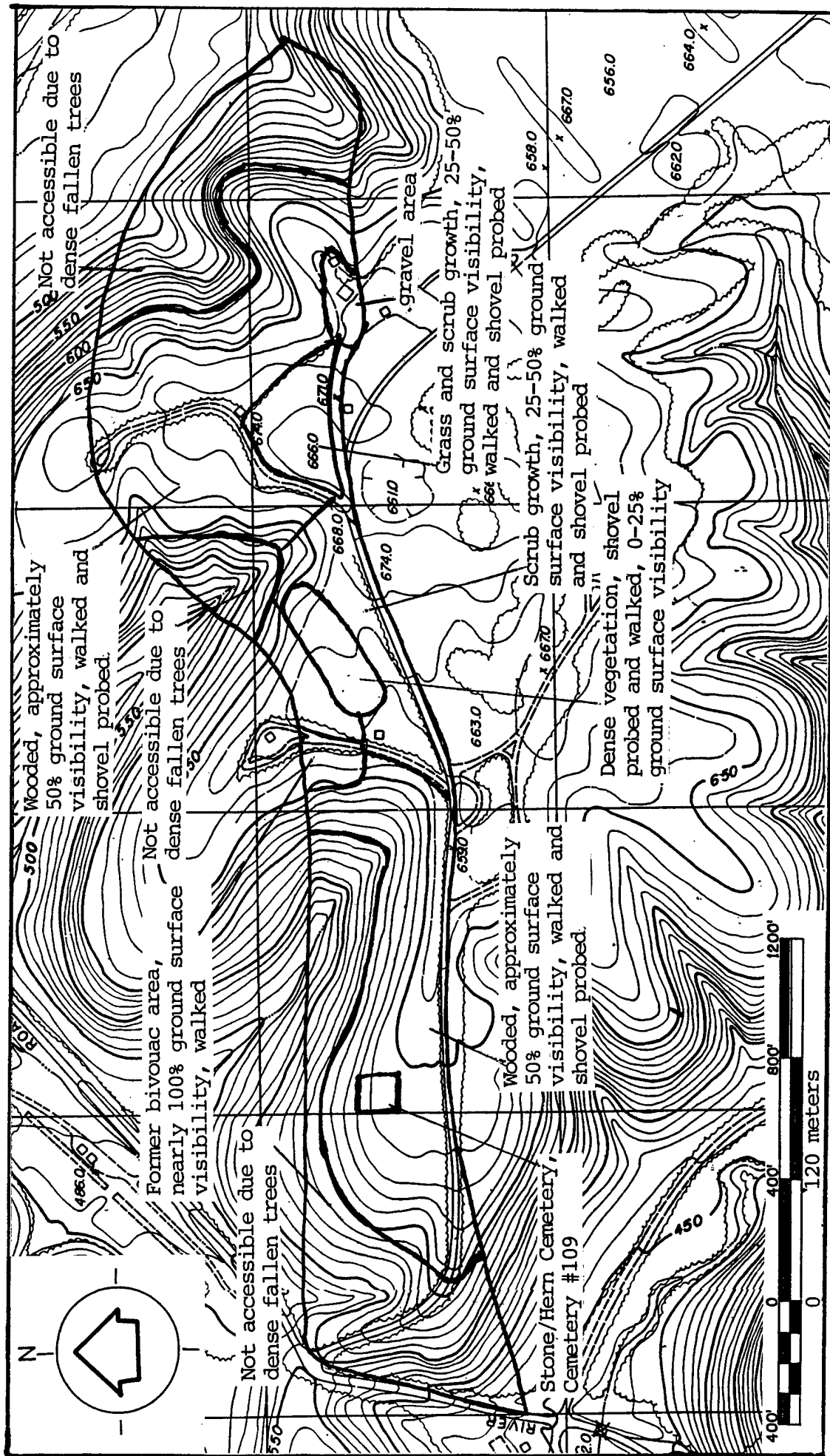


FIGURE 3. Plan View of Project Area.

its tributaries, located more than 200 feet below the ridge crest is covered Quaternary alluvium and lacustrine deposits. At some times during the Pleistocene and Holocene and more recent periods of severe flooding, the project area has overlooked a backwater lake. Quaternary and possibly Tertiary terrace deposits exist in limited areas above the 700 foot contour interval on nearby Hooker Mountain (Kepferle and Sable 1977), suggesting the lake may have been quite deep and extensive prior to the Holocene.

Portions of three of the four ridge spurs in the project area had been subject to military construction, demolition, and training activities from World War II through the present. The fourth ridge spur is bisected by Easy Gap Road, which existed prior to Army acquisition as a dirt road.

The three eastern ridge spurs had been developed as bivouac areas during and/or after World War II, although they have not been used as extensively in recent years for long-term training as they once were. A building covered with corrugated metal sheets stands on the easternmost ridge. Although most of this ridge top apparently had been a gravel parking area at some time, the movement of vehicles in combination with erosion and integrated the road gravels into the upper layer of soil in many areas and had covered the gravel with a thin layer of erosional wash soil in others. The two central ridge spurs once had numerous buildings, although only a single detached latrine remains standing in each bivouac area. A number of concrete foundations still exist, and a former privy location was found which is partially covered with a thick plywood board. Portions of each bivouac area are covered with gravel and each area showed evidence of prior disturbance in at least some areas due to bulldozing, construction, and the excavation of privy pits and foxholes.

The project area was systematically walked in transects spaced approximately 10 m apart. On each ridge spur, one-half of each ridge was walked at a time working from Easy Gap Road to the end of the project area in transects perpendicular to the ridge spur axis. The approximate ridge center line and/or bivouac road and the place on the slope at which fallen trees made further survey impossible were used as the stopping points for each transect. Transects were walked down half of the ridge crest to the project end and then back towards Easy Gap Road on the other side of the ridge.

Ground surface visibility was variable in the project area, ranging from nearly zero to nearly 100 percent. In most accessible areas, ground surface visibility was approximately 50 percent, with fallen leaf cover the main deterrent to observation of the ground surface. Dense vegetation was present on a portion of the east portion of the third ridge spur from the east, reducing visibility to less than 25 percent in some areas. The ground surface along deer paths,

around tree driplines, around animal burrows, in fallen tree root balls and holes, and in erosional gullies was examined to take advantage of available open ground surface.

Although the majority of the bivouac area on the third ridge spur from the east end of the project area is indicated as lying in the "heavily damaged" zone on Figure 2, the trees in this area were widely scattered on the ridge top. Ground surface visibility was 50 to 100 percent in the northern portion of this bivouac area.

If the ground surface was obscured by vegetation for greater than 10 m within a transect, then a shovel probe was excavated. Each shovel probe was approximately 30 cm square at ground surface and excavated until subsoil, bedrock, or dense road gravel was encountered. The depth of subsoil varied from immediately below the humic zone to approximately 25 cm below ground surface. The fill was trowel sorted for cultural materials prior to the backfilling of the probe. Road gravel was encountered in numerous shovel probes near the bivouac areas.

The small portion of the project area south of Easy Gap Road had only a very narrow ridge crest before it sloped steeply. Drive-by survey indicated that this narrow ridge crest was previously disturbed by road construction and the slope was inaccessible due to fallen trees. All of the lower ridge slopes in the project area were inaccessible due to dense fallen trees which prevented access and hid root holes and erosional gullies. Where the ground surface of the slopes could be viewed from the ridge top, the surface appeared to be eroded to subsoil or bedrock.

The examination of the project area resulted in the discovery of no archaeological sites. A historic cemetery exists in the project area, however.

#### CEMETERY #109

Cemetery #109, or the Stone/Hern cemetery, is a small family cemetery located within the proposed timber harvest area. Five marked headstones are present. These are for the graves of James Hern (March 12, 1804 - November 7, 1877), his wife Susan Hern (January 14, 1800 - December 1, 1881), their son Cephas Hern (March 3, 1833 - January 19, 1862), their daughter Mary Hern Stone (born October 8, 1836) who shares a headstone with her husband George Stone (October 20, 1835 - October 20, 1901), and the son of George and Mary, G.W. Stone (October 30, 1864 - January 15, 1889). There is a problem with G.W. Stone's dates as reported in Kempf (1993), because G.W. Stone does not appear in the 1870 or 1880 census. He probably lived from 1864-1869 or from 1884-1889, and a digit was misread on the headstone.

Mary and George Stone share a single headstone, a modestly sized obelisk with Mary's information on the side closest to her grave and George's information on the opposite side from Mary's and closest to his grave. The graves have separate footstones. Mary's death date was not inscribed on the stone, but since this property was bought from the Mary Stone heirs, Mary must have died by 1919. The graves of James, Susan, and Cephas Hern and of G.W. Stone all have footstones. In addition to the inscribed stones, there are a number of fieldstones which appear to be uninscribed headstones or footstones and several sunken graves or possible graves, with or without uninscribed markers. An indentation to the east and west of the known graves suggests that a wood fence may have once surrounded the cemetery.

In the current survey three small sunken areas, each with a single marker were noted near Mary Stone's grave. These were probably children of Mary and George Stone who died in infancy. The layout of the other sunken graves suggests that these may be other children of James and Susan Hern. James and Susan (Susannah in the 1850 census) had at least two other daughters, Malvina (b. 1825) and Frances F. (b. 1828), and one son, James T. (b. 1830), in addition to Cephas and Mary, according to the 1850 census. The Stones had at least five children in addition to G.W. -- Susan M. (b. 1869), Hillery (a son b. 1871), Roderick (b. 1873), Gertrude (b. 1875), and Ava (b. 1878). Of these, the gravesites of only James T. Hern and Roderick Stone could be confirmed as being in other cemeteries in a preliminary document search. James and Susannah Hern were English immigrants. The 1850 census states lists England as the birth place for their five children, but the 1870 census lists Kentucky as the birth place for their son, James T., and daughter, Mary, their only two children who could be located in that census.

Two signs screwed to a tree had marked the juncture of the dirt road which leads to this cemetery with Easy Gap Road during the first visit to the project area. One sign identified the cemetery and the other identified the family who had adopted it through Fort Knox's Adopt-A-Cemetery program. The cemetery identification sign had fallen off the tree between the first and second visits, and needs to be put back up.

Storm damage to the cemetery was remarkably light, considering the devastation around it. The soil over Cephas Hern's grave is buckled from a nearby partial tree fall, but the grave is not exposed. A large tree root hole was formed just downhill from Cephas Hern's grave by a tree blown over in the storm. This hole needs to be filled in, or else Cephas' grave will erode or slump into it. A tree fell on a small unmarked fieldstone headstone, breaking off several pieces. This marker should be reparable. Another tree landed

on a shaped footstone or small headstone. No damage to the stone was observed, but it needs to be reexamined after the tree is removed. No other major damage was noted.

The perimeter of the cemetery had been marked at some time in the past by a continuous band of white cloth engineering tape, but the storm knocked down many of the trees to which the engineering tape had been tied. The contract Staff Archaeologist tied strips of blue-and-white striped flagging tape at intervals along the faded white engineering tape where it still existed and put a continuous band of flagging tape around the rest of the perimeter where the original tape was missing. A band of flagging tape was tied around the top of each larger headstone, and either flagging tape or pink flags were used to mark the location of each smaller headstone or footstone observed. The perimeter was marked to delimit the area to be avoided by the logging vehicles, and the individual stones were marked so the loggers could modify tree removal techniques to avoid impact to the known graves.

The Hern/Stone cemetery was adopted by the Ruth family, of Radcliff, Kentucky, shortly after its discovery ca. 1991. The Ruth family is not related to the Herns and Stones and only recently moved to this region. The Ruth family cleared out the underbrush at that time to make the cemetery more visible. The Ruth family has been contacted to keep them informed of the pending removal of the fallen trees in the cemetery vicinity. According to Mrs. Ruth, they had tried to get to the cemetery twice after the May storm to assess the damage and clean up debris, but the first time could not get near it, and the second time, Mr. Ruth was able to get to the cemetery but not easily enough to haul in the equipment necessary for the clean up. The Ruth family plans to visit the cemetery after the logging operations are completed to finish the removal of branches and wood chips and to remove weeds in the cemetery area.

It is a goal of Fort Knox to eventually fence and put identification signs on each of the 119 cemeteries currently known. Budgetary constraints have made it impossible to get them all fenced and signed, and in-house priorities are based on a combination of the visitation rate and the vulnerability to impacts of a particular cemetery. Some Adopt-A-Cemetery program participants have paid for fencing on their own, but the Stone/Hern Cemetery has not yet been fenced. If funds are available, it is recommended that this cemetery be fenced after the logging operations are completed to facilitate the future location, protection, and management of the cemetery.

## CONCLUSIONS AND RECOMMENDATIONS

The Phase I literature search of the proposed Hunting Area 54 timber harvest area determined that only the easternmost ridge in the project area had been previously inspected. A review of the acquisition maps showed that buildings associated with a historic farmstead had existed on this eastern ridge in 1919. All accessible areas of the proposed timber harvest project were surveyed in the current study, including the previously surveyed ridge. The inspection of the project area resulted in the discovery of no archaeological materials or deposits. It is recommended that the installation be permitted to harvest timber and clean up fallen trees in Hunting Area 54 as proposed.

No evidence of the Cooley/Brown farmstead was found on the easternmost ridge. It is assumed that evidence of the farmstead was destroyed during the 1940's construction of military training support buildings and a gravel parking area on this ridge. A linear scatter of daylilies along the north side of Easy Gap Road on the ridge top to the west of the one on which the Cooley/Brown buildings stood suggest that the soil from the historic occupation locus was used to improve this road or was otherwise smeared along the ridge top during road construction activities.

One cemetery, Cemetery #109 or the Stone/Hern Cemetery, lies within the project area and has many storm damaged trees around it. Historic cemeteries are not generally considered archaeological sites in Kentucky and must meet special criteria to be eligible for the National Register. Whether or not a cemetery is eligible for the National Register, a grave site is protected under the Archaeological Resource Protection Act (ARPA) if it is over 100 years old, as are many of the graves in the Stone/Hern Cemetery. A grave site also may be protected under Kentucky Regulatory Statute (KRS) 525.110 (Desecration of Venerated Objects), and 525.120 (Abuse of Corpse).

The perimeter of the cemetery has been marked with a continuous band of flagging tape and each headstone and footstone observed by the contract Staff Archaeologist was flagged to assist the loggers in avoiding adverse impact to any portion of the cemetery. It is recommended that the contract Staff Archaeologist be on-site when the logging is taking place in the cemetery vicinity to assist with the cemetery protection and cleanup. It is recommended that the root hole just north and down hill from Cephas Hern's grave be filled in to prevent slumping or erosion of Cephas Hern's grave. It is recommended that the cemetery be fenced after the logging operations are completed to facilitate the identification of its location if it gets overgrown again and to facilitate its protection and management.

Access to all portions of the project area is available from Porter River Road, Easy Gap Road, and the roads leading to the bivouac sites. Porter River Road and Easy Gap Road are gravel roads. The roads into the bivouac areas are partially gravelled and portions are bermed. No impact to any significant cultural resource is therefore expected as a result of the movement of vehicles to be used in this project.

In the remote possibility that archaeological materials are discovered during the timber harvesting, all work in the vicinity of the finds must cease and the State Historic Preservation Officer (502-564-7005) and the DPW Staff Archaeologist (502-624-6581 or 502-624-3629) should be contacted, so a representative of those agencies may evaluate the materials. Also, if human remains, regardless of age or cultural affiliation, are discovered, all activity in the vicinity of the remains must cease immediately, and the state medical examiner (502-564-4545) and the appropriate local law enforcement agency (Fort Knox Law Enforcement Command, 502-624-6852) must be contacted, as stipulated in KRS 72.020.

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APPENDIX A.  
RESUME OF PRINCIPAL INVESTIGATOR

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Department of Sociology, Anthropology, and Social Work, Murray State University, Murray, KY, November 1991-June 1993;  
Staff Archeologist, November 1983-November 1991.

Southern Illinois University, Carbondale, IL: Field Technician, November-December 1985, September-October 1984.

Illinois State Museum Society, Springfield, IL: Field Assistant II (Supervisor), summer 1983; Field Technician, summer 1981.

Center for American Archeology, Kampsville, IL: Field Technician, summer 1982.

Department of Anthropology, Northwestern University, Evanston, IL: Teaching Assistant, 1981-82 academic year.

Great Lakes Archeological Research Center, Milwaukee, WI: Field Technician, summer 1979.

Field Research Experience:

Field experience on prehistoric and historic archeological projects in Illinois, Indiana, Kentucky, New Jersey, South Dakota, Tennessee, and Wisconsin, 1979-present.

Professional Publications, Reports, Papers and Manuscripts:  
90 CRM contract reports on projects in Indiana, Kentucky, and Tennessee.

1 Homicide site excavation contract report prepared in lieu of court testimony in Illinois.

7 Papers presented at professional conferences.

5 Publications, 1 in press.

Doctoral candidacy qualifying paper: "A Theory of Individual Style Variation for Archeological Studies".

Ms. submitted in partial fulfillment of the M.A. requirements: "Models of Environmental-Cultural Relationships: Testing with Archeological Evidence".